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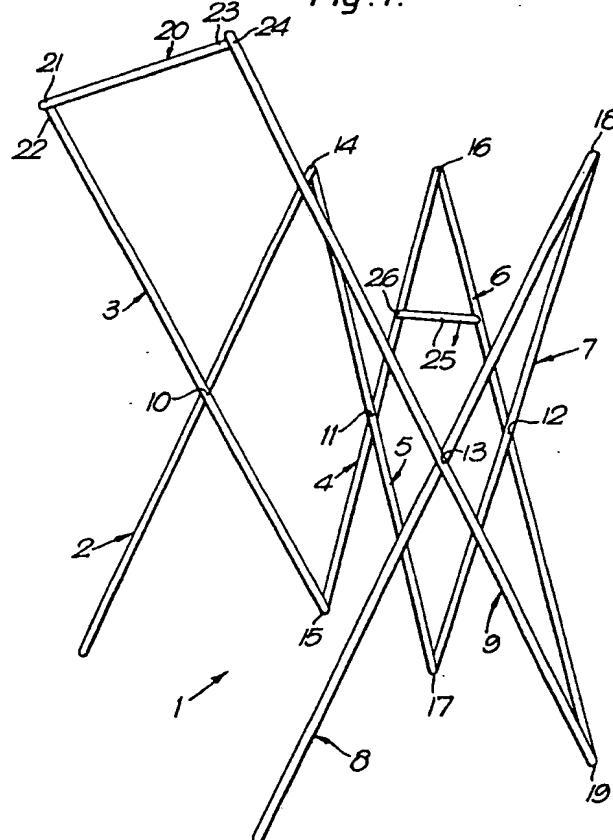
(56) Documents cited  
GB 0791189 GB 0171273 US 3710806  
GB 0179218 US 3968808

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E1D  
Selected US specifications from IPC sub-class E04H

## (54) A framework for a shelter

(57) The framework, e.g. for a barbecue shelter, comprises a plurality of elongate elements or bars (2 to 9) pivotally interconnected in a "lazy tongs" arrangement whereby the framework can be erected or collapsed into a bundle with the elements or bars parallel in a single movement. The framework includes releasably connectable struts or cross bars (20, 25) which lock the framework in its erected position.

Fig. 1.



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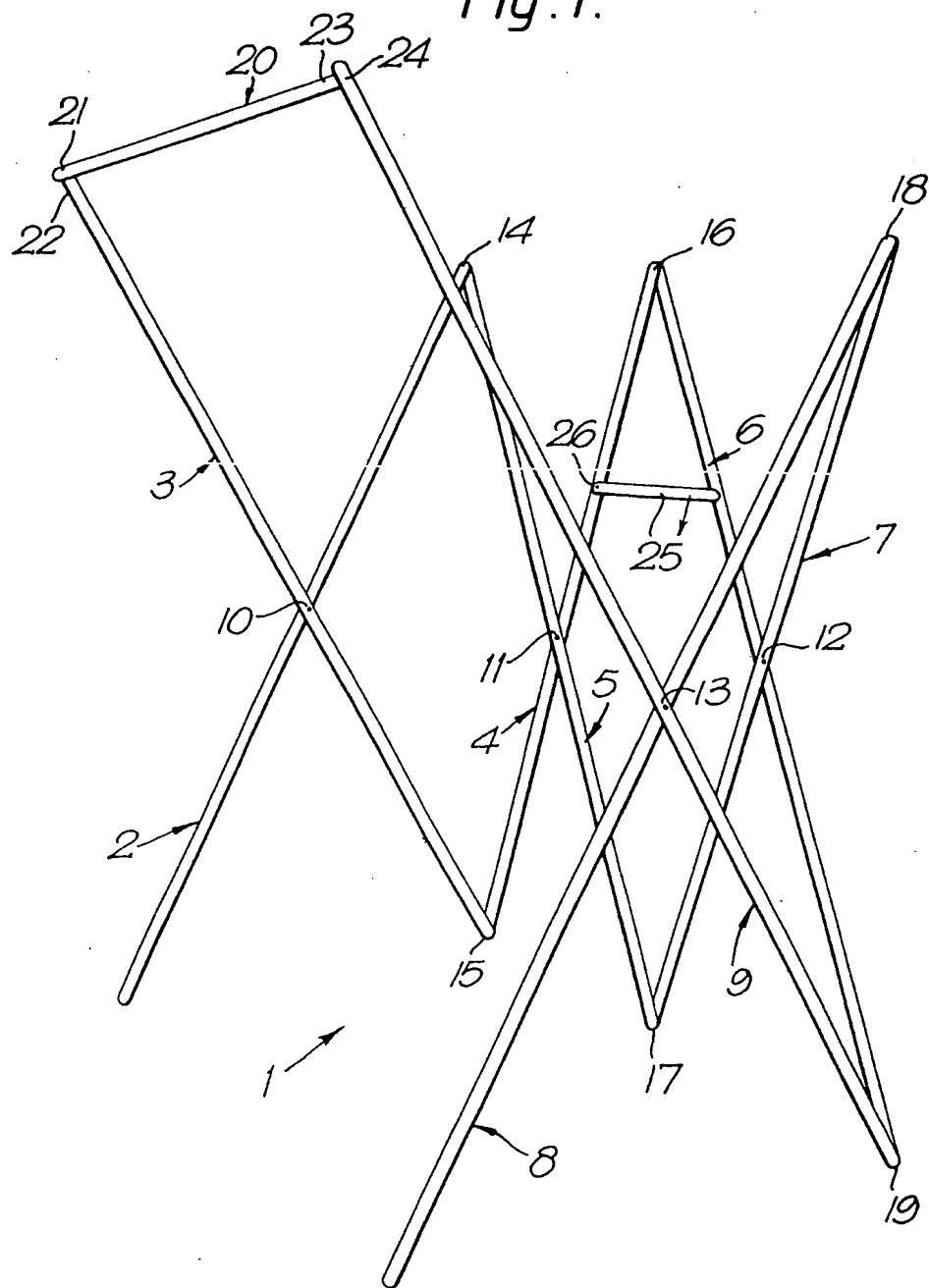
The drawing(s) originally filed was/were informal and the print here reproduced is taken from a later filed formal copy.  
The claims were filed later than the filing date within the period prescribed by Rule 25(1) of the Patents Rules 1982.

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Fig. 1.

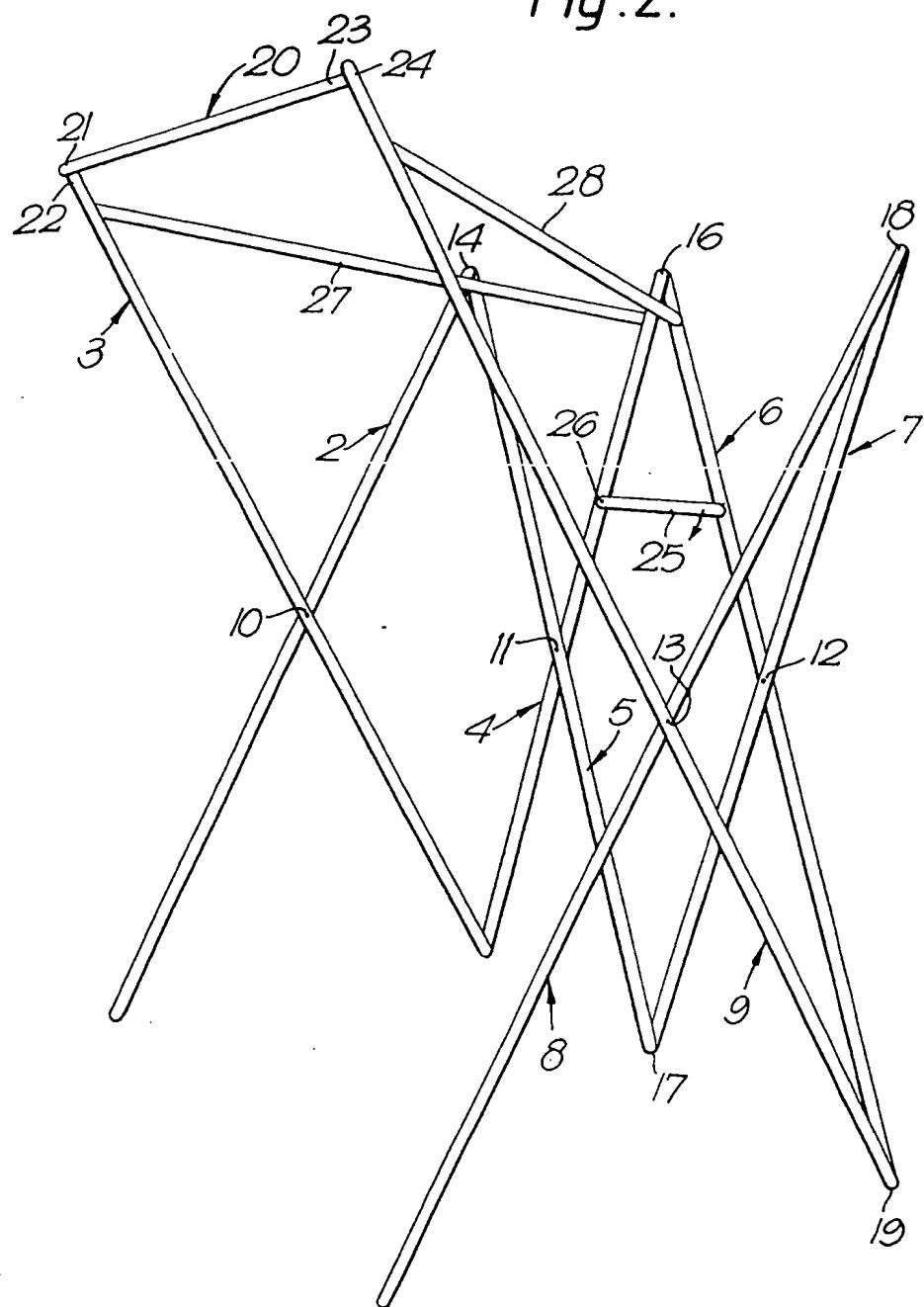


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Fig. 2.

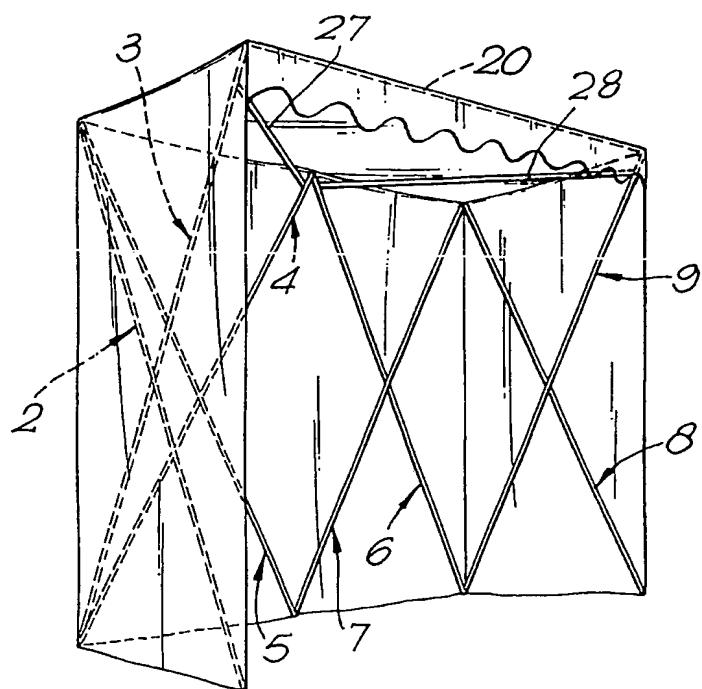


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Fig. 3.



## SPECIFICATION

## A framework for a shelter

5 This invention relates to a framework for a shelter and in particular to a framework that can be readily erected and collapsed.

A variety of framework shelters, in which a framework of interconnected elements is covered with, for example, canvas or tarpaulin sheet, are well known. However, such shelters are generally complicated to erect requiring the sequential interconnection of the variety of support elements. If the shelter is to be erected, for example, when it is raining, the time taken for such sequential interconnection of elements frequently leads to the person assembling the shelter becoming extremely wet. Thus there is a need for shelter that can be quickly and easily assembled.

It is an object of the present invention to provide a shelter that at least mitigates the problems associated with prior art shelters.

Accordingly, the invention provides a framework for a shelter in which a plurality of elements are connected together in a "lazy tongs" arrangement to enable movement in a single action from a position in which the elements are aligned in parallel, in a collapsed bundle, to an erect position in which a three dimensional shelter is defined, at least some of the elements being connected together in zig-zag fashion to define walls of the shelter and at least one locking element being provided to lock the framework in this erected position.

Preferably, a plurality of pairs of elements are provided, each pair being pivotally connected at midpoints thereof and one of each pair being pivotally connected in zig-zag fashion to one of an adjacent pair of elements. The axis about which the elements pivot are arranged in the assembled framework are positioned such that the desired opening of the framework from the collapsed bundle to its erect form is achieved in a single movement.

Desirably the framework has a substantially open frontage, the sidewalls of the front being defined by opposing pairs of interconnected elements and a single crossbar is provided connected to the upper region of one of the elements of each said pair, the crossbar being adapted to be pivotal in respect of one of the said elements and to be received for fixed connection to the other said pair when the framework is assembled.

Desirably, the rear of said framework is defined by interlinked co-operating pairs with the angle of spacing of the interlinked elements being fixed in the assembled form of the framework by a crossbar member interconnecting said elements in generally "A" fashion.

Desirably, the cross member is fixed for pivotal movement with respect to one of said

elements and to be received for fixed connection to the other of said elements.

In order that the invention may be more readily understood, and so that further features thereof may be appreciated, an embodiment of a framework embodying the invention and a shelter constructed from such a framework will now be described, by way of example, with reference to the accompanying drawings; in which:

Figure 1 illustrates one form of framework of the invention;

Figure 2 shows a framework similar to Fig. 1 but with addition of strengthening elements; and

Figure 3 illustrates one form of covered shelter incorporating the framework of Fig. 2.

Referring to Fig. 1, and considering the framework in its erected state, a framework 1 comprises a plurality of interconnected elements 2 to 9, the elements being connected together in pairs by respective pivot means 10 to 13. Thus, pivotally connected pairs are formed between elements 2, 3; 4, 5; 6, 7; and 8, 9.

The pairs of elements are also interconnected in a hinge-like fashion, upper and lower ends of elements in adjacent pairs being hinged together by hinge joints 14 to 19. The pivot axis and hinge elements are so arranged that upon opening of the elements from the collapsed position, the elements naturally open outwardly to assume the desired three-dimensional form.

The arrangement shown in Fig. 1 has a generally open front having opposing sides defined by the pivotal pair of elements 2, 3 and the pivotal pair of elements 8, 9. Upper ends of the elements 3 and 9 are connected together by a crossbar 20 which is hingedly connected at a first end 21 to the top end 22 of the elements 3 and is adapted to be received for releasable fixed connection at its other end 23 to the top end 24 of the element 9.

The rear of the framework is defined by a substantial diamond shape arrangement of elements, defined by the hinged connection of the pivotal pairs of elements, 4, 5 and 6, 7, the lower ends of the elements 5 and 7 being connected together by hinge member 17 and the upper ends of the elements 4 and 6 being connected together by hinge member 16. To lock these elements in the erect state a cross-bar member 25 is provided. The member 25 is pivotally connected to the element 4 by pivot means 26 and is adapted to be removably connected to a corresponding point on the element 6. The combination of the element 4, 6 and cross member 25, in the erect state, define a generally "A" shaped unit.

The framework may readily be folded by releasing the cross member 25 and the cross-bar 20 from its locking position on the element 6, 9, respectively. Release of the mem-

bers 20, 25 allows the elements to pivot about the axis defined by the pivots 10, 11, 12 and 13 and about the hinges 14, 16 and 18 to collapse the elements in a single movement to a position in which the elements are aligned in a substantially parallel arrangement in a discrete bundle. In the collapsed state the bundle of elements can be appropriately strapped together for ease of transportation.

10 It will be appreciated that any desired awning or cover may be placed over the framework. In the one particularly preferred embodiment the framework is provided with a flameproof cover.

15 The cover may be a one-piece unit intended to be dropped over the erected framework or may be suitably attached to the framework elements so that the cover is maintained in position when the framework is collapsed and, 20 accordingly, is in position for use as soon as the framework is erected.

It will be appreciated that this framework provides significant advantages in that it can be readily assembled, a single action being required to produce the required three-dimensional structure which then needs only movement of two locking elements in two positions to stabilize the structure.

25 In some circumstances it may be desirable 30 to provide the structure with increased stability and, as shown in Fig. 2, such increased stability can be provided by the positioning of additional interconnecting support elements 27, 28, as shown in the drawing the support member 27 may be hingedly connected towards the upper end of the element 4 and be adapted for removable connection to the upper end of the element 3 and likewise to the support member 28 may be hingedly fixed to 35 towards the upper end of the element 6 and adapted for a movable connection to the upper end of the element 9. By providing the support elements 27, 28 with hinged connections these elements can be folded against the 40 adjacent support elements so that the elements can be collapsed as in the embodiment of Fig. 1.

45 Fig. 3 illustrates one fixed preferred combination of the framework with a suitable cover.

#### 50 CLAIMS

1. A framework for a shelter in which a plurality of elements are connected together in a "lazy tongs" arrangement to enable movement in a single action from a position in which the elements are aligned in parallel, in a collapsed bundle, to an erect position in which a three dimensional shelter is defined, at least some of the elements being connected together in zig-zag fashion to define walls of the shelter and at least one locking element being provided to lock the framework in this erected position.

2. A framework according to claim 1 65 wherein a plurality of pairs of elements are

provided, each pair being pivotally connected at midpoints thereof and one of each pair being pivotally connected at midpoints thereof and one of each pair being pivotally connected

70 at an end thereof to an end of an element of an adjacent pair of elements.

3. A framework according to claim 1 or claim 2 wherein the axes about which the elements pivot are so positioned that the desired

75 opening of the framework from the collapsed bundle to its erect form can be achieved in a single movement.

4. A framework according to any preceding claim, which has a substantially open frontage, the framework having sidewall parts defined by opposing pairs of interconnected elements and a single crossbar being provided

80 connected to the upper region of one of the elements of each of said opposing pairs, the 85 crossbar being pivotally connected with one of the said elements of one of said opposing pairs and being adapted for releasable connection to the respective element of the other of said opposing pairs when the framework is 90 assembled.

5. A framework according to any preceding claim, having a rear which is defined by interlinked cooperating pairs of elements, with at least one element of each of the last-mentioned pairs being pivotally connected at its 95 end with the end of an element of the other pair and being maintained at a fixed angle with respect to that element of the other pair by a crossbar member interconnecting said elements to form a structure having the general form of a capital "A".

6. A framework according to claim 5 wherein the cross member is pivotally connected with respect to one of said elements 105 and can be detachably connected with the other of said elements.

7. A framework according to any of claims 1 to 6 and substantially as hereinbefore described with reference to, and as shown in, 110 the accompanying drawings.

8. A shelter incorporating a framework according to any preceding claim.

9. Any novel feature or combination of features described herein.